RALEIGH AMATEUR RADIO SOCIETY
RARS
WORLDWIDE FRIENDSHIP

JUNE - 1970
ISSUE # 9

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"Raleigh Amateur Radio Society News"

NEXT MEETING

The next monthly meeting of the RARS will be Wednesday evening June 3rd at 7:30 p.m. The meeting will be at the Civil Defense Headquarters, in the basement of the N.C. State Government Administrative Building on 116 West Jones Street. Ample parking is available behind the building. Please, enter through the back door. Everybody is welcome.

RARS MEMBERS PASS EXTRA AND ADVANCED

Just last month, this newsletter asked who would be the first to announce a new Extra Class license in this newsletter. Our RARS Treasurer, Bill McDowell, K4CIA, passed the Extra Class exam on May 7th, and John Freid, W4WWD, passed the Advanced Class exam. John is Chairman of the Name Tag Committee. A very hearty congratulations go to Bill and John.

RARS THANKS WA4PEN & WA4OTA

A Motorola Sensicon receiver and transmitter for the RARS 2-meter repeater was donated by Tom Alexander, WA4OTA, and a power supply for same was donated by Ed Alderman, WA4PEN. Everyone is looking forward to the day the repeater goes on the air. Thanks fellows.

MEET YOUR MEMBERS - STU MEYER, W2GHK/4

Hailing originally from Staten Island, New York Stu needs no introduction to anyone active in amateur radio. Constantly working behind the scenes, Stu is one of the prime reasons why RARS is the strong active club it is today. Few people are ever fortunate enough to incorporate their hobby into their work, and Stu is one of those rare individuals who, through his love of electronics, and own ability, did just that. Stu received his electronics education at the DeForest Institute in Chicago, and later took radio communications at the U.S. Naval Academy. During World War II he served in Navy - aviation communications. As an engineer he worked at Link Radio; then later at Allen B. Dumont Laboratories and at Hammarlund, where hams worldwide began to know him as Mr. DXpedition of the Month. He is presently Executive Vice President of Aerotron, Inc. in Raleigh, a position he has held for the past four years.

Stu is a "fellow" in the Radio Club of America, and is Chairman of the engineering committee of the amateur radio section--of the Electronic Industries Association. A Director of RARS, he resides at: 4000 Wingate Drive, Raleigh, with his wife, Lottie, and two daughters, Susanne & Rosemarie. It is rumored that CP&L had to run a special transmission out to this QTH, to keep Stu's rigs from blinking all the lights in north Raleigh. An avid DXer, he can be found most any evening on 10, 15 or 20 meters running a schedule with another ham in some far off exotic place or calling CQ DX (and boy, you should hear those pileups).
WA4OTA

RARS PLANS A MAJOR OFFENSIVE

A major offensive is planned by our RARS captains and co-captains. Under their direction, the RARS with big guns and supplies will move into a base camp position, June 27th, for an all-out assault on the Hertz. The following sectors will be searched but not destroyed.

SECTOR	CAPTAIN		CO-CAPTAIN	
80, 75 and 10	Bill McDowell	K4CIA	Carl Crumley	WB4MLI
	John Freid	W4WWD		
40	Bob Johnson	W4CQJ	Steve Kastleberg	WB4NAW
20	Stu Meyer	W2GHK/4	Austin Farrell	W2BXE/4
15	Mike Wood	WA4UXU	Ron McCann	WB4OZL
6 & 2	Don Wolfe	WB2VKJ/4		
Novices	Bob Corns	K4MC	Ron McCann	WB4OZL

Fire power will be under the direction of Haywood Foster, WA4JFU, and Safety of our forces, Jim Johnson, W4JUG. This will be a battle to the victory requiring all our air support.
Tom Martin, K4CQJ

1970 ARRL FIELD DAY RULES - QST MAY 1970 P. 60

MESSAGE PROCESSING

In planning for the use of communications assets available to provide communication service during emergencies, the organization and management of the message center is the item on the planning checklist which is always either taken for granted or overlooked. A well-planned, adequately staffed, properly managed message center is an absolute must if message traffic is handled accurately and speedily. Notice that accuracy is considered ahead of speed. Consistent accuracy in the receipt, transmission and delivery of messages is absolutely essential to the effective operation of a message center. Speed loses its importance if messages are inaccurate upon delivery. A message can be valueless or even misleading if the originator's thought is changed or if the message is not clearly intelligible to the addressee.

The time required to complete the transmission receipt and delivery of messages is a primary consideration in the efficient and satisfactory operation of a message center. Continuous effort must be exerted to reduce this time factor to a minimum consistent with accuracy. Speed is acquired only through efficient operation - in all phases of message center functions. Local handling of messages within an emergency-operating center often consumes more time than the actual transmission.

Procedures for organizing and managing a message center are beyond the scope of this article. However, if the following general functions are carefully considered, and planned for by the Communication Officer and the Message Center Supervisor, overall communication service will be excellent:

1. Provide a point to which messages and messengers may be directed. ("Outgoing Message Supervisors" Desk)
2. Keep posted in the message center the current status of all means of communication available. (This varies quite rapidly in some situations - this task is usually assigned to the "Means Chief")
3. Properly distribute message traffic to the available means. For example, a 50 - word message should not be routed over a voice radio circuit if a CW or radio-teletype circuit is available).
4. Operate an effective intra-emergency operating center messenger service. (Foot messenger is the best way to route a message from the "Incoming Message Supervisors" Desk to the addressee four rooms away.)
5. Establish close coordination with all agencies and staff members which the message center will serve.
6. Maintain necessary message center records properly. ("Incoming" and "Outgoing" Logs - "Live" and "Cleared" Message Files, Personnel Shift Schedules, etc.)
7. Develop a positive method of "Follow-Up" on each message to assure prompt clearance.

The proper operation of a message center requires people, but remember, the people do not necessarily have to be licensed amateurs. A "YL" who is a good secretary can do a far better job as an Incoming Message Supervisor than an old mossy-horned extra - class CW OP.

NORTH CAROLINA CIVIL DEFENSE HEADQUARTERS

QRM FROM THE EDITOR

Last month, I had a few words to say about the possibility of the Raleigh Amateur Radio Society assisting the Wake County Civil Defense with their communications. About the time the item was written, a number of things happened. Wake County Hospital had a practice "disaster" and the RARS appointed a CD committee chairman. He is Dan Wolfe, WB2VKJ/4.

Dan has already been very active in his new job. He went with Norm Ramge, Wake County CD, to observe the mock "disaster" at the hospital on April 18th. An article in the local newspaper described the events. Two sentences caught my attention. "The Wake County Sheriffs Department was going to provide communication, but for some good reason they did not. The largest problem in the drill was communication, both internal and external." Dan talked to the officials and told them what RARS could offer. They were very interested. Dan and Carl Crumley, WB4MLI, Wake County EC, are working very hard on this project. They want everyone to turn in the AREC forms, even if it is a negative report.

I heard an hour long program on WPTF a few weeks ago, with people calling in questions to Jim Denning-N.C. Civil Defense Director. I remember only one question that did not ask about bomb shelters and fallout. This is chiefly what the public thinks CD is only concerned with. They forget about the natural disasters that CD spends so much time on. If the RARS can help Wake County CD with their communications, the public can be better informed.

As far as most of the public is concerned, the main reason for amateur radio is disaster work, and this is probably the chief reason we are able to keep our frequencies

when broadcasting, business, government and other countries would like to take them. So, FCC regulation part 97.1 (a) has a great deal to do with us being amateur radio operators today. Read part 97.1 and think about it.
DAVE, W4YDY

TAR HEEL NET PICNIC

The Tar Heel Emergency Net will hold a picnic on June 14th at Morrow Mountain State Park near Albemarle, N.C. Everyone is invited. Bring your own basket and plan to have a good time.

ROCKY MOUNT AND WILSON CONTACTS WANTED

John Sherwood, KZ5MS/W4DRJ, in the Canal Zone and formerly of Cary, N.C, would like to contact stations in Rocky Mount and Wilson. He wants to get some phone patches to his relatives. He can be found most days on 21.030 kHz at 2200Z to 2300Z. He will set up schedules for phone operation. Also, he can sometimes be found at 1700Z Wednesdays on 21,345 kHz in the OA4YW/W4YDY QSO.

REPEATER CHATTER

Chairman of the FM Repeater Committee, Bob Johnson, reports that RARS will proceed to set up its first 2-meter repeater temporarily at the QTH of Ed Alderman, WA4PEN. It appears that repeater regulations are in a state of flux at the present time, especially as to remote controlling, and the committee feels that until they are straightened out this will be the safest way to proceed. The station, of course, will give the club the opportunity to experiment and work towards that ultimate set-up at some remote location. A Motorola Sensicon Receiver and Transmitter will be the heart of this first unit and Ed promises to put up an antenna at least 150 feet high. (Or did I hear him incorrectly?) Bob Morris is working on Duplexing problems. Any suggestions or ideas or thoughts about a future site - contact Ed or Bob Johnson. WA4OTA

MINI-TECHNICAL REVIEW

May QST has the rules for the annual Field Day 27-28 June. Hope K4CQJ understands them cuz this time we want to WIN. Problems wid QST es PO dept.? Read the ed and find out. Note that the 1st 100 KHz of the 144 band now A1 only. 10M RTTY now o.k. on 28-28.5 MHz. (That's what all those QSOs were about). A 2M QRP Mountain Topper is not a weekend project, as described on p. 15; it may last forever because it ends in midair.(?) So write QST for missing poop ere painting yourself into a corner. Unusual kit described, this time an IC 2-tone generator for SSB, complete with FB waveforms clearly shown. Trends all toward IC these days. For DX hounds, full wave 80M quad and 10-15M beams QSO'd. FB to note there are at least 2 awards left not given out with ON-OFF switches, i.e. the A1 op and PSA awards. Might be news to some.

Apr CQ has all band 4CX1000A linear driven AB1 for simpler tuning and less demand for cheery red finals. (Turn in those 610's). It is at same time good poop as review of basic amplifiers. FB article on RTTY control to keep you from hari-kari. Read about real neat scope cart, not for $ 120.00 but for price of lumber. A real boon for the impoverished, disadvantaged, over-rich, over-poor, lazy maybe ham. Part II of erecting TH6DXX antenna. Confusion in Ten-Tec SS CW transceiver brochure dis-spelled by CQ Review, most timely. VHF preamp wid toroid, latest on OSCAR, and improving SX101A follow.

May CQ plugs tax exemption for us hams. Also has 5 band 2-el quad (5BDXCC anyone?), ingenious 30 Hz power supply used in 24-hr clock (don't roll those bloodshot eyes at me), converting B&W 5100B to 6M, split freq. op wid HW100, and vy FB Revu of Yaesu FTdx560 (real credit for JA ops using TV 6KD6 bottles). Last has 1 year guarantee too! Article on calibrating DC meters reminds us that WWV does not broadcast DC,yet. Thyristors get into the act with hi I and lo V triac power supply described near end of issue. Read about strange doings in propagation of OSCAR 5 on p. 60.

May HAM has cubical quad, portable multiband dipole, triangular and vertical beams (what's left?), Z transfer bridge for max power (how can they say this is max efficiency?), and several QSOs on transmission lines that read easier than Whinnery, Kraus, et al. Also note moonbounce antenna for 144 MHz. For us near Cow College, we read about a plow for digging in radial ground systems (knew I should have salvaged my intrenching tool in the Pacific during that interlude before violent demonstrations).

May 73 brings up its sarcastic (what else) RRCC, WAAS, CHC, DXDC, and WAAS awards. Read P. 9 (follows P. 10 minus 1). Special report on FCC's proposed repeater rules uses fairly logical rebuttal sans the sick sarcasm. Follow many short articles, such as plus Db, car burglar alarm, mounting Gonset 6 in Buick Riviera (disadvantage), cooling tubes, epoxy heatsink, FET preamp for VHF-FM, "idiot" lights, lo band police calls, mobile CW xmtr with 12DQ6, and others are topped by dissertations on 5/8 wavelength verticals, power supplies from surplus, Part II of SS IF, a 3/4x3/4x1/8 xtal 6M xmtr (that's inches, OM), and Part XVI RFPAs for amateur extra class exam. A thinking man's pitch is on p. 116 re Science Fair. Educators have got to get with it...create hams. Engineers will survive regardless but let's encourage others to be hams also. A good plug for FM repeaters is write-in on p. 139. As a matter of fact, the letter bit has several interesting QSOs.

May Popular Electronics describes a laser beam communicator for $ 180.00. After their FB digilab project last month, the IC Experimenter Corner has another winner, their shift register kit for about $ 12.00. We can get a fine course in logic circuits if we subscribe to this mag. A neat circuit to counteract severe power line surges is shown on p. 58. Basically a differential amplifier, this should protect those expensive meters won at the last auction or door. This neat little mag. has, I bet, turned on lots of young lads for ham radio.

May Electronics World really gets with the power transistors. Explains 599. If tired of slip stick juggling to figure Q, check nomogram on P. 30-31. How to be the chief engineer of a QRP xmtr station is followed by a simple electronic siren, the Panic Button. (Engineers for BC chief anyone?) Been keeping waveguides where us plumbers could check them, but now they're burying them on p. 42. (PM out the window!). Using line current to calibrate scopes within 1 usec is presented on p.46 etc. (Maybe we better inform CP&L?). To make up for the nomogram, note that slide rule calculations are back in on p. 53 for freqs. Other choice articles render HAM,

as usual, a vy gud buy.

June Radio-Electronics, the Early Birds, explain their vy own burglar alarm. Stock in burglars is dropping rapidly. Better to turn in the torch and light and operate clean in daylight, if these rabble-rousing articles keep appearing. Some guys got no respect. How to use low power Zeners for hi watts, careers in aviation electronics (we don't have to fly the F111s), using triacs, and the usual tools for electronics section are the QSY. The mag's price is worth its Stereo multiplex FM in 1970 cars bit. This FB QSO really checks a novice out on stereo. FB issue all round.

March Proceedings of the IEEE is a special issue on air traffic control. Just in time for the strikers; must have made the time pass quickly. For the air-minded there are lots of goodies like Demand for Air-Services, Noise Propagation at Busy Airports, Collisions and Missed Approaches (minis agn!), Collision Exposure, Separation of Air Traffic Visually (off the scopes again), Midair Collision, and Infra-Red Pilot Warning Indicating System. Anyone for violence on TV? So solly ground-pounders, but we're Airborne ourselves (has beens).

April Spectrum points up apparent lost battle to prevent new nontariff barriers erected in Europe against U.S. electronic components. If only we had LOST the war, we could all be rich and watch, not fight, little wars. Also wir haben a gud QSO on IC voltage regulator, EHV lines in W. Germany, a plea for proprietary rights for inventors, A3 QSOs via satellite forced industrial conversion to commercial or other non-military tasks, and piezoelectric effects in ferrochemical ceramics. (You will be excited to note the friendly hysteresis curve on the vy 1st page). A good QSO to stir up the HS lad interested in electronics is on p. 78, the Early History of Electronics. Yes, the IEEE is definitely increasing its reader interest.

March Electro-Technology is the last free issue. It's now $ 45.00 per year, so 73 for most of us. Anyway, this issue has a good bit on pressing air traffic problems, and advocates its panacea, or "universal" ILS, using microwave beam-scanning techniques. Nice while it lasted.

March and April Microwave Journal speak of hyperacoustic waves, closely allied to surface magnetic waves (remember the E field is shorted out), both of which will soon be familar phenomenon. (Maybe somebody better check out the ovens or some of us won't be around) If you're up on your math and not lost with Smith charts, a trip to the library if you don't have this mag. would certainly be worthwhile. Maybe you've been using the wrong coax on your VHF gear. Parts II and III of digital communications at GHz data rates are in both issues.

April 13 Electronics has one article of particular import to hams and that's one on mm waves for future commo. And the IMPATT's the nucleus. It provides 100 mw of continuous power in its 40-110 GHz band. Read the implications in this 59 QSO.

April 27 Electronics is worth a ham's perusal just for the articles on electronic systems to strengthen law enforcement. Washington, D.C., is leading in this endeavor with its Washington Area Law Enforcement Service (WALES). It heralds a new era in the application of electronic technology to law enforcement. Keep your cans on for the latest (if not meanwhile mugged).
BERT, W4FMN

ANSWERS TO LAST QUIZ

Z ratio is 1000:1 The turns ratio is directly proportional to the square root of the impedance ratio, or $N_p:N_s$ equals square root of 100, and ratio sought is 31.6:1.

THIS MONTH'S QUIZ

A 100W motor is used to operate the compressor of a household refrigerator. If the refrige is on 10% of the time and the cost of juice is 3.2¢ per kwh, what is the monthly cost of operating for a 3-day month?
BERT, W4FMN

FOR SALE

Drake TR-3 Transceiver with AC and DC power supplies. Excellent condition. $ 400. Herb Powell, W4KUE, Cary, N.C.

WANTED

Heath SB-200 Linear. Harry Wiggs, W4ANU, Raleigh, N.C.

WANTED

Low power all band VFO controlled transmitter for CW operation. 50 to 100 watts. Herb Powell, W4KUE, Cary, N.C.

NEEDED

About 30 inch high cabinet for linear amplifier. Standard 19 inch width. Or two shorter cabinets. WB4HAL, Raleigh, N.C.

RARS VISITORS

The Raleigh Amateur Radio Society was pleased to note that among its visitors were Cliff Blalock, N.C. Civil Defense and Norm Ramge, Wake County CD. Cliff is W4GLK and Norm is planning to get an amateur license. Both had a few words to say about their work with Civil Defense.

TWO METER FM PREVENTS DISASTER

One day in April, 1970, Tom Martin, K4CQJ, RARS field day chairman, and Dan Wolfe, WB2VKJ/4, made a fact-finding trip to the North Carolina State Fairgrounds to check out possible field day sites. They took HF and VHF gear and made several tests. Late in the day, they packed up their gear and started for home. But when they came to the gate, it was locked. They tried another. Locked!!! They tried all the gates and they were all locked. It looked like it might be a long weekend. But.. being calm amateur radio operators, Tom and Dan broke out the 2-meter FM gear and frantically screamed "CQ emergency." Lee Johnson, WA4ZNA, RARS vice-president, came

to the rescue and answered the call. Lee called the N.C. Highway Patrol and they contacted the fairground custodian. When he arrived to release the captives, he informed them that if the call from the Highway Patrol had come 10 minutes later, he would have been gone for the weekend. Well, Tom and Dan could have had a practice field day so all would not have been lost!

IS THAT SO?

WB4HAL - What did you do before you got married?
WA4OTA - Anything I wanted do.
WB4HAL - Oh yes!

RARS CALENDAR OF EVENTS

June 3----------Regular meeting
June 14---------RARS dinner at Statler-Hilton
June 16---------Executive committee meets
June 27-28------ARRL Field Day
July 1----------Regular meeting
July 21---------Executive committee meets
August 5--------Regular meeting
August 18-------Executive committee meets
Sept. 2--------Regular meeting
Sept. 15-------Executive Comm. meets
October 7------Regular meeting
October 20-----Executive Comm. meets
Oct 31-Nov 1---Roanoke Conv. in Rlgh
Nov. 1-7-------N.C. Amateur Radio wk
Nov. 4---------Regular meeting
Nov. 7-8-------N.C. QSO Party

ABOVE DATES ARE SUBJECT TO ADDITIONS AND CHANGES.

CAROLINAS NET

CN April Report

Total Sessions	29/30	Total Net Time	512	Total Traffic	83
Total Checkins	208	Average Net Time	17.5	Average Traffic	2.8
Average QNI	6.7	Different Stns	36	Message Rate	.21

This completes the April report and it could turn out to be the last one I do for a few years. If a job comes through, I will be working out of state this summer and going away to school this fall. So it looks like both John and I are going to retire from our posts as manager and assistant manager. From what I understand, the South Carolina guys are supposed to come through with the new managers, but they are having trouble finding an RM.

Our totals for this month are up somewhat over last month, which is encouraging to me. I suspect the activity will drop off during the summer and pick up again this fall.

I really enjoyed the LO meeting in Greensboro which gave me the opportunity to meet W4IRE, W4WXZ, W4PED, and W4NTO. It was very interesting and informative to attend this meeting and I'm sure all who went will agree.

73 to all for now, and see you on the net.
CARL, WB4MLI

SICK-IN

W6IF6:(on phone). Say, Fred, I'll talk you thru the neutralization if you want. You said you were rusty.
VK8O7: FB, Joe, GA. Got the rig right here.
W6IF6: Well, first throw on the plate power...of course, everybody knows to disconnect the plate caps first...don't they, Fred?
. . . .Fred. . . .FRED. . . . .Speak to me, Fred. . . . . .

K4CIA: Don't know why Tom's so happy with his XYL's combination record player and air conditioner.
DL4MC: He likes to play it cool.

K4CQJ: Hey, what's the call for Ceylon?
W4FDV: I dunno. Look it up in your history book. That's what Columbus kept telling his men before discovering America.

REV.W4: Do you say a prayer at nite?
Harmonic: No, my mom says one for me.
REV.W4: Ah so. And what does she say?
Harmonic: Thank God he's in bed. 73.

YL, Pizza House: Would you like ur pizza cut in 6 or 8 pieces, OM?
W4PEN/PH: Only 6 please. Ah don't believe ah could handle 8.

W7COW: Hey, podnuh, what's the name of your spread?
W4JUG/7: The XYL Lazy J Double Diamond Circle Q Bar QSY.
W7COW: Waal, - how many head you got?
W4JUG/7: Only a few, wrangler. Not many survive the branding.

ODE TO WA4OTA

'Twas the night before a trial
And all thru the jail
Not a creature was stirring....
They were all out on bail.

VOTE FOR TOM FOR SUPREME COURT. HE'S GETTING MORE LIBERAL EVERY DAY NOW.
BERT, W4FMN

THE NFB GROUND LOOP

Unskilled pilots -- which leaves us hams out -- soon become familiar with the ground look. This causes problems. But us hans also have trub with another kind of ground loop, the NFB (not FB, that is) ground loop. This is the greatest source of electrical noise between electronic components..More than one ground on a signal or its cable produces a common impedance loop or coupling between those two points. The size of ground loop current is in direct ratio to the differences in absolute potential between the two grounds. Large 60 Hz noise currents are in series and com-

bine with the useful signal. A ground loop thru a signal circuit or coax will produce so much 60 Hz noise that signal levels in the mv range will be swamped, lost. Two separate grounds are just never at the same absolute voltage level. It is this voltage difference that causes undesirable current in one of the signal leads. The most common remedy is to float the device voltage a few volts off ground. Do not ground the signal coax at both the source and the device. In this manner, no path is created for the circulation of undesired current. The next time you scope that amplifier, connect the signal coax to either the CT or low side of the signal source and do not ground the coax at the amplifier. This procedure should eliminate a major cause of 60 Hz clutter. Watch those ground loops!
BERT, W4FMN

This Bulletin Printed Courtesy of Aerotron, Inc.

October 31, 1970
Roanoke Division
ARRL Convention
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JIM RUMBLE - VK6RU VISITS RALEIGH THE WEEKEND OF JUNE 13th - 14th. IF INTERESTED IN ATTENDING A SPECIAL DINNER FOR HIM AND HIS XYL, SUNDAY, JUNE 14th, PLEASE CONTACT STUART MEYER, W2GHK/4/ P.O. BOX 17316, RALEIGH, NORTH CAROLINA 27609.

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